

SONY®

White paper

November 2012



XPERIA SX

SO-05D

Purpose of this document

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

Document history

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Sony Mobile Developer World

For the latest technical documentation and development tools, go to <http://developer.sonymobile.com/wp>.

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Table of contents

Signature features	2
Facts – dimensions, weight, performance and networks	3
Categorised feature list	5
Technologies in detail	7
Device-to-device communications (local)	7
Bluetooth™ wireless technology	7
FeliCa™	8
Wi-Fi®	9
DLNA Certified® (Digital Living Home Alliance)	10
Messaging	11
Email	11
Positioning – location based services	12
Provisioning (OMA CP)	12
Multimedia (audio, image and video)	13
Digital TV (1seg)	14
Synchronisation (OMA DS, EAS, Google Sync™)	14
Web browser	15
Trademarks and acknowledgements	16

Signature features

The Sony Xperia™ SX comes with a range of features as standard. Below is a summary of the key signature features.

Xperia™ Timescape™

Communication made easy

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™ and Twitter™ communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

Xperia™ infinite button

Everything you want – from everywhere

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

Xperia™ Local connectivity

More control over your media

Using Xperia™ Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

Xperia™ Home screen application

The place you call Home

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Which is the best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you've got plenty of space to put things where you want. Just remember to flick left or right to find them.

Facts – dimensions, weight, performance and networks

Operating system	Google™ Android™ 4.0.x (Ice Cream Sandwich)
Processor	1.5 GHz Qualcomm Snapdragon™ MSM8960 Dual core
GPU	Adreno™ 225
Size	115 x 54 x 9.4 mm
Weight	95 grams
Available colours	Black Orange Pink White
Main screen	
Colours	16,777,216 colour TFT
Resolution	540x960 pixels (qHD)
Size (diagonal)	3.7 inches
Scratch-resistant	Shatter proof sheet on scratch-resistant glass
Input mechanisms	
Text input	on-screen 50-character keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 10 fingers supported
Memory	
RAM	1 GB
Flash memory	Up to 4 GB
Expansion slot	microSD™ card, up to 32 GB
Camera	
Camera resolution	8.1 MP
Digital zoom	16x
Photo flash	Yes – Pulsed LED
Video recording	Yes – HD 1080p
Front Camera	Yes – VGA
Sensors	
Accelerometer	Yes
Proximity sensor	Yes

Ambient light sensor	Yes
Magnetometer	Yes
Gyroscope	Yes
Networks	
SO-05D	LTE 2100 (Band I) HSPA 800 (Band VI), 800 (Band XIX), 2100 (Band I) GSM 850/900/1800/1900
Data transfer speeds	
GSM GPRS	Up to 86 kbps (download)
GSM EDGE	Up to 237 kbps (download)
UMTS HSPA cat 6 (upload)	Up to 5.7 Mbps
UMTS HSPA cat 10(download)	Up to 14 Mbps
LTE cat3	Up to 25 Mbps (upload), up to 75 Mbps (download)
Talk time (GSM)	Up to 6 hours**
Standby time (GSM)	Up to 280 hours**
Talk time (UMTS)	Up to 5 hours 50 min.**
Standby time (UMTS)	Up to 360 hours**
Music listening time	Up to 18 hours 10 min.**
Video playback time	Up to 4 hours**
Embedded Battery	1500 mAh Minimum




*** Talk time/Standby time (GSM/UMTS) is according to the operator's condition for Battery Life Measurement.*

NOTE: Battery performance may vary depending on network conditions and configurations, and phone usage.

NOTE: Performance metrics measured under laboratory conditions.

Categorised feature list

 <p>Camera</p> <ul style="list-style-type: none"> 3D Sweep Panorama 8.1 megapixel camera 16x digital zoom Auto focus Face detection Front-facing camera (VGA) Geotagging HD video recording (1080p) Image stabiliser Flash/LED Flash/Photo light Scene detection Red-eye reduction Send to web Self-timer Smile detection Sony Exmor R™ for mobile image sensor Touch capture Touch focus Video light Video recording Video stabiliser White balance 	 <p>Music</p> <ul style="list-style-type: none"> Album art Bluetooth™ stereo (A2DP) Music tones (MP3/AAC) PlayNow™ service* SensMe™ TrackID™ music recognition* “WALKMAN” application xLoud™ Experience 	 <p>Internet</p> <ul style="list-style-type: none"> Bookmarks Google Maps™ for Mobile with Google Latitude™ and Street View* Google Play™ Google™ search* Google Voice™ Search* NeoReader™ barcode scanner Pan & zoom Web browser (WebKit™)
 <p>Communication</p> <ul style="list-style-type: none"> Call list Google Talk2™ application* Facebook™ application* Noise Suppression Xperia™ Timescape™ Speakerphone Twitter™ (Timescape™ integration)* Vibrating alert 	 <p>Messaging</p> <ul style="list-style-type: none"> Conversations Email Google Mail™* Handwriting recognition Instant messaging Predictive text input Text messaging (SMS) 	 <p>Design</p> <ul style="list-style-type: none"> Auto rotate Gesture input Gyroscope On-screen 12-key keyboard On-screen QWERTY keyboard on-screen 50-character keyboard HD Reality Display with Sony Mobile BRAVIA® ENGINE Screenshot capturing Touch screen Picture wallpaper

 <p>Entertainment</p> <ul style="list-style-type: none"> 3D games Digital TV (1 seg) Media browser Motion gaming PlayStation® Certified Radio (FM radio with RDS) Sony Entertainment Network* TV launcher Video streaming YouTube™* 	 <p>Organiser</p> <ul style="list-style-type: none"> Alarm clock Airplane mode Calculator Calendar Contacts Document readers E-manual FeliCa Infinite button OfficeSuite Pro Setup guide Widget manager 	 <p>Connectivity</p> <ul style="list-style-type: none"> 3.5 mm audio jack (CTIA) aGPS* Bluetooth™ technology DLNA Certified® GLONASS* HDMI support via MHL IrDA™ Media Transfer Protocol support Micro USB support Modem Native USB tethering PC Companion Synchronisation via Microsoft® Exchange ActiveSync® Synchronisation via SyncML™ Synchronisation via Google™ Synchronisation via Facebook™ TV Out USB High speed 2.0 support Wi-Fi® Wi-Fi® Hotspot functionality
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* This service is not available in all markets.

Technologies in detail

NOTE: The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Mobile Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

Bluetooth™ wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v.1.3 Handsfree Profile v1.5 Headset Profile v1.1 Human Interface Device Profile v1.1 Object Push Profile v1.1 Personal Area Networking Profile v1.0 Phonebook Access Profile v1.1 Serial Port Profile v1.1
Core version and supported core features	Version 3.1
Connectable devices	Products supporting at least one of the profiles above.

More information:

<http://developer.sonymobile.com/wp>

www.bluetooth.com

IrDA

Data transfer rate	IrDA SIR: up to 115.2 kbps
Maximum transfer data size	No restriction

Data Communication	
Sending Data	Comment
Contacts (include MyProfile)	The phone has supported for the transmission of one or all contacts, including MyProfile. Contacts are transferred in vCard format.
Picture/Movie	The phone has supported for the transmission of single a file. Supported formats are according to DoCoMo specification. (vNote format is supported.)
Others	vCard/vMessage/vCalendar formats supported some applications provided by DoCoMo are supported.
Received Data	Comment
Contacts	The phone has supported for the reception of one or all contacts. Contacts can be received in vCard format.
Picture/Movie	The phone has supported for reception of a file. Supported formats are according to DoCoMo specification (vNote format is supported).
Others	Files in non-supported formats are not stored. vCard/vMessage/vCalendar formats supported some applications provided by DoCoMo are supported.

FeliCa™

Mobile FeliCa Client	Ver 2.2.0
Card mode	Yes
R/W	Yes (Internal card / External card)
Ad-hoc	Yes
FALP	Yes

Wi-Fi®

Supported standards	IEEE 802.11 a/b/g/n and Wi-Fi®
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz/5 GHz
Data transfer rate	Up to 150 Mbit/s
Security	WEP 64 bit WEP 128 bit Wi-Fi Direct TKIP CCMP (AES) Open Authentication Shared Authentication EAP-SIM EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM/WMM-PS
Auto setup	WPS

DLNA Certified® (Digital Living Home Alliance)

Supported Device Classes	<p>M-DMS – Mobile Digital Media Server Media Types: images, video and music Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients.</p> <p>+PU+ Media Types: image, video and music Summary: Play media in the phone on another device, such as a TV or computer using 2-box push technology. +PU+ is integrated into the Gallery and Music applications.</p> <p>M-DMP – Mobile Digital Media Player Media Types: image, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.</p> <p>+DN+ Media Types: image, video and music Summary: Download content stored on another device, for example, a server or a PC, and play the downloaded content directly on the phone.</p>
Supported Bearers	Wi-Fi®
DRM Support	The Sony DLNA Certified® implementation does not support DRM-protected content.

Messaging

Email

Bearer type (IP)	GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

More information:

<http://developer.sonymobile.com/wp>

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v2.0
- 3GPP™ Control Plane location (excluding Emergency location)
- Qualcomm® GPSOneXTRA™

Supported satellite systems:

- GPS
- GLONASS*

* **NOTE:** GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions, if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API ("GPS location Provider" in Android terminology).

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	Decoder format	Supported in file format
	Audio decoding MPEG-1/2/2.5, audio layer 3	MP3 (.mp3), 3GPP (.3gp), MP4 (.mp4, .m4a)
	AAC, AAC+, eAAC+	3GPP (.3gp), MP4 (.mp4)
	AMR-NB, AMR-WB	3GPP (.3gp), MP4 (.mp4)
	General MIDI (GM)	SMF (.mid)
	FLAC	FLAC (.flac)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	Ogg vorbis	Ogg vorbis (.ogg)
	PIFF	PIFF (.isma)
Audio Recording	Encoder format	Supported in file format
	AMR-NB, AMR-WB	3GPP (.3gp)
	AAC-LC stereo, sample rate 48 kHz bit rate up to 384 kbps	3GPP (.3gp, .3gpp) MP4 (.mp4, .m4a)
Image Playback	Decoder format	Supported in file format
	1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats	BMP (.bmp)
	Single and multi-frame, bitmap mask support (GIF87a format and GIF89a format)	GIF (.gif)
	New Image format provided by Google for the web	WEBP (.webp)
	Joint Photographic Experts Group	JPEG (.jpg)
	Portable Network Graphics Bitmap mask support	PNG (.png)
Image Capture	Encoder format	Supported in file format
	Joint Photographic Experts Group	JPEG (.jpg)

Video Playback	Decoder format	Supported in file format
	MPEG-4 Visual Simple Profile, Advanced Simple Profile Level 6	3GPP (.3gp), MP4 (.mp4)
	H.264 Baseline/Main/High Profile Level 4	3GPP (.3gp), MP4 (.mp4)
	H.263 Profile 0, Profile 3 Level 70	3GPP (.3gp)
	VP8	WebM (.webm, .mkv)
	PIFF	PIFF (.ismv)
Video Recording	Encoder format	Supported in file format
	Video H.263 Profile 0, H.264 Baseline Profile Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps, AMR-NB mono, sample rate 8 kHz bit rate 5.2 kbps	3GPP (.3gp), MP4 (.mp4)
Audio/Video Streaming	Streaming transport	RTSP according to 3GPP™ HTTP streaming
DRM	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM 1.0 Marlin DRM PlayReady™ Widevine Level 3

Digital TV (1seg)

Data Broadcasting	Supported
Caption	Supported
Recording	Not supported
Viewing reservation	Not supported
Recording reservation	Not supported
G-Guide application	Supported

Synchronisation (OMA DS, EAS, Google Sync™)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Microsoft® Exchange ActiveSync® protocol version 14.0

Microsoft® Exchange ActiveSync® protocol version 14.1

Google Sync™

Related information:

<http://developer.sonymobile.com/wp>

Web browser

Browser version	Android 4.0 Browser (Based on WebKit™)
Navigation/rendering	Pan & Zoom Landscape/portrait rendering Full page PC rendering
Search	Internet search
Browser compliancy	HTML version 4.0 HTML version 5.0 XHTML Basic version 1.0 XHTML 1.1 CSS 2.0 CSS 2.1 CSS 3.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 DOM 2.0 DOM 3.0
Supported Device API	Geo-location API
Protocol compliancy	HTTP/1.1 TLS 1.0 and SSL 3.0 Gzip OMA Download 1.0

Related information:

<http://developer.sonymobile.com/wp>

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